

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST 6162

FACILITY NAME: IMAT, Inc.

December 2008

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST 6162. The Department of Ecology (Ecology) is proposing to issue this permit, which will allow discharge of wastewater to the **Clark Regional Wastewater District and Salmon Creek Wastewater Treatment Plant (POTW)**. This fact sheet explains the nature of the proposed discharge, Ecology's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (Revised Code of Washington [RCW] 90.48.080 and 90.48.160) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. This statute includes commercial or industrial discharges to sewerage systems operated by municipalities or public entities which discharge into public waters of the state. Regulations adopted by the state include procedures for issuing permits and establish requirements which are to be included in the permit (Chapter 173-216 Washington Administrative Code [WAC]).

This fact sheet and draft permit are available for review by interested persons as described in Appendix A—Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, Ecology will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of Ecology's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D—Response to Comments.

Table 1: General information

Facility Name and Address:	IMAT, Inc. 12516 NE 95 th Street, Suite D110 Vancouver, Washington 98682
Type of Facility:	Semiconductors and Related Devices
Standard Industrial Classification (SIC) Code:	9999—Nonclassifiable Establishment according to a current application. 3674—Semicondarots and Related Devices according to a previous application.
Facility Discharge Location:	This facility discharges to <u>Clark Regional Wastewater District and Salmon Creek Wastewater Treatment Plant (POTW)</u> . The sewer connection for IMAT is located at: Latitude: 45° 41' 24" N Longitude: 122° 32' 45" W
Contact at Facility:	Name: Tatsuo Nakato, President Telephone #: (360) 256-5600 Email: tatsuon@imatinc.com
Responsible Official:	Name: Tatsuo Nakato

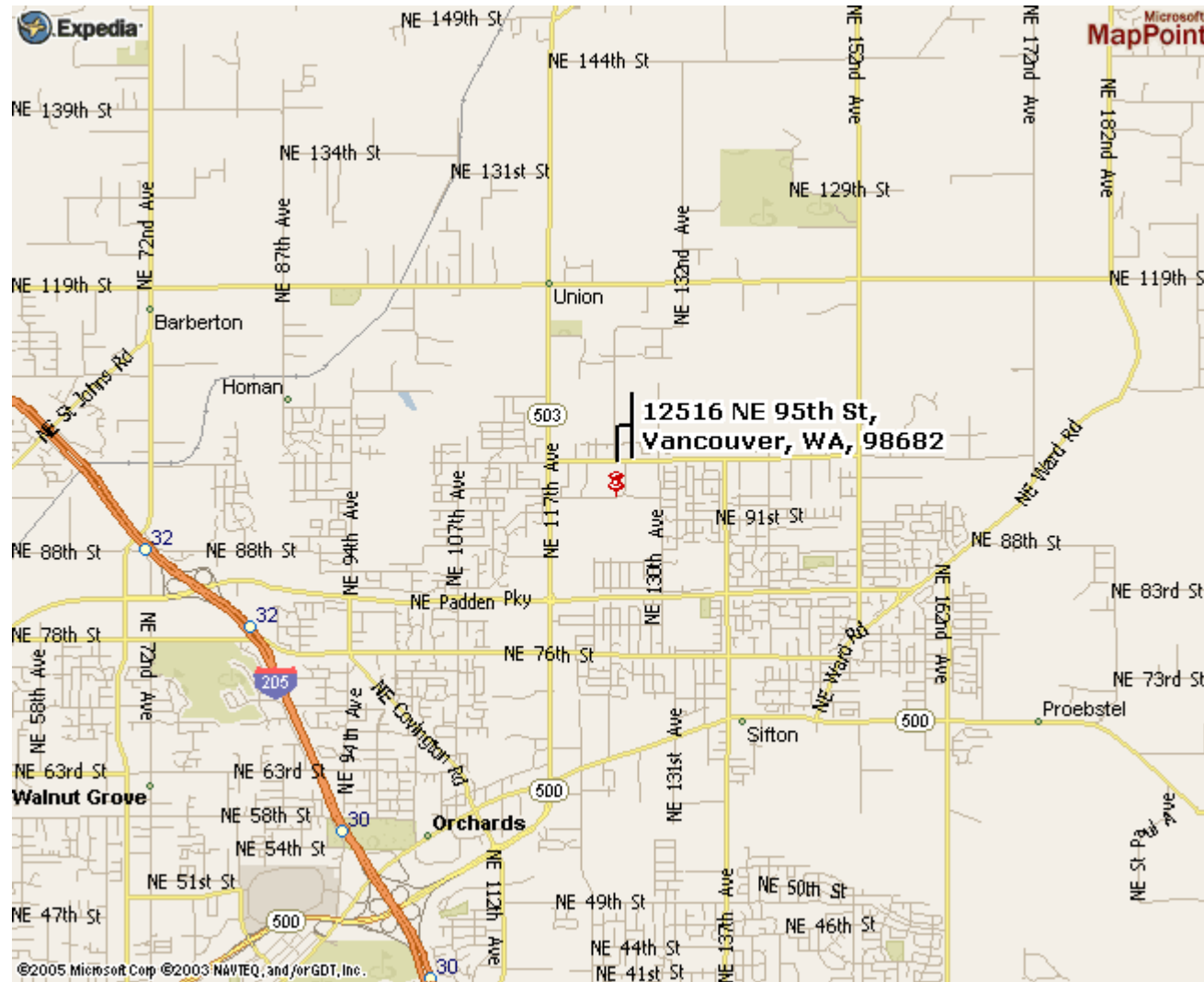
FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST 6162
IMAT, Inc.

Table 1: General information

	Title:	President
	Address:	12516 NE 95 th Street, Suite D110 Vancouver, WA 98682
	Telephone #:	(360) 256-5600
	FAX #:	(360) 256-7766

IMAT, Inc.

Figure 1: IMAT vicinity map



BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

IMAT is a Significant Industrial User and subject to Categorical Pretreatment Standards, 40 Code of Federal Regulations (CFR) 469–Electrical and Electronic Components Point Source Category–Subpart A–Semiconductor Subcategory.

HISTORY

IMAT specializes in Thermal Oxidation and PVD Metal Deposition of wafers from 75 mm up to 300 mm in diameter. The facility was founded in 1995 as a Silicon Wafer processing company.

INDUSTRIAL PROCESSES

IMAT operates following product lines (IMAT, 2007):

1. Silicon (Si) wafer oxidation (SIC 9999); IMAT oxidizes Si wafers brought in by a customer or its own wafers purchased from a Si wafer manufacturer in an oxidation furnace at 1050 degree Celsius (°C) introducing oxygen gas and steam.
2. Si wafers cleaning (SIC 9999); IMAT cleans Si wafers using SC-1 (a mixture of hydrogen peroxide and tetramethylammonium hydroxide (TMAH) ¹) with Megasonic held at 50 °C, followed by DI² water rinse and drying step using Malangoni effect and hot nitrogen (N₂).
3. Silicon dioxide (SiO₂) stripping (SIC 9999); SiO₂ film coated Si wafers are brought in by a customer for oxide stripping and regrowing using a silicon wafer oxidation process. IMAT strips oxide using 30 percent hydrogen fluoride (HF) solution followed by a deionized (DI) water rinse and a dry step using Malangoni effect and hot nitrogen (N₂).
4. Metal deposition (SIC 9999); IMAT sputters aluminum (Al), Al alloys, titanium (Ti), copper (Cu) and refractory metals on Si wafers using a direct current (DC) magnetron sputtering system. It deposits precious metals and ferromagnetic metals on Si wafers using a vacuum evaporator.
5. Photoresist coating (SIC 9999); IMAT dispenses and spins photoresist on Si wafers using spin-coater after it makes the Si wafer surface wettable to photoresist using solvent. After coating photoresist, IMAT removes photoresist built up at the periphery of the wafer using the same solvent.
6. Photoresist stripping (SIC 9999); IMAT places the Si wafers that need photoresist removal on the spin coater and pours solvent on them while they spin. After removal of the photoresist IMAT spin-dries the wafers and then places the wafers into the Plasma asher to burn out photoresist residue.

Previously IMAT was classified by SIC code 3674, Semiconductors and Related Devices.

¹ Tetramethylammonium hydroxide (TMAH) is a quaternary ammonium salt with the molecular formula (CH₃)₄NOH. It is used as an anisotropic etchant of silicon. It is also used as a basic solvent in the development of acidic photoresist in the photolithography process (Answer.com).

² Deionized.

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TREATMENT PROCESSES

IMAT treats the wastewater using a pH neutralization system for pH control. The facility segregates and collects concentrated fluoride wastes for off-site treatment and disposal. It also segregates and collects the photoresist wastes for off-site handling.

PERMIT STATUS

Ecology issued the previous permit for this facility on October 8, 2002. The permit effective date was July 1, 2003.

IMAT submitted an application for permit renewal to Ecology on January 11, 2007, and Ecology accepted it on January 29, 2007.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on September 22, 2008.

During the history of the previous permit, IMAT has not remained in compliance based on Discharge Monitoring Reports (DMRs) and other reports submitted to Ecology and inspections conducted by Ecology. A summary of compliance over the life of the permit is in the DMR Violation/Warning Summary Report, Appendix C.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application Section E (Appendix C) and in discharge monitoring reports (Table 2).

Table 2 Wastewater characterization reported in the discharge monitoring report.

Parameter	Units	Minimum	Maximum
Flow, maximum daily	Gallons per day (GPD)	532	6,506
Flow, average monthly	GPD	184	3,369
pH	SU	6	9
Chlorine Demand	Milligrams per liter (mg/L)	0.728	2
Arsenic	mg/L	<0.0005	<0.05
Cadmium	mg/L	<0.00002	<0.02
Chromium	mg/L	0.00119	<0.1
Copper	mg/L	<0.003	<0.3
Cyanide	mg/L	<0.005	0.14

Table 2 Wastewater characterization reported in the discharge monitoring report.

Parameter	Units	Minimum	Maximum
Lead	mg/L	0.00005	<0.02
Mercury	mg/L	<0.0002	<0.001
Nickel	mg/L	0.0002	<0.05
Selenium	mg/L	0.001	0.1
Silver	mg/L	0.00002	<0.05
Zinc	mg/L	0.0026	0.52
Oil and Grease (O&G)	mg/L	3	14.81
Fluoride, maximum daily	mg/L	0.6	8.4
Fluoride, average monthly	mg/L	0.6	8.4
Total Toxic Organics (TTOs)	mg/L	<0.46	<0.89
Barium	mg/L	0.00007	<0.02
Beryllium	mg/L	0.00002	<0.05
Iron	mg/L	0.0809	<0.15
Phenol	mg/L	0.01	<0.1

PROPOSED PERMIT LIMITS

State regulations require that limits set forth in a waste discharge permit must be based on the technology available to treat the pollutants (technology-based) or be based on the effects of the pollutants to the POTW (local limits). Wastewater must be treated using all known, available, reasonable methods of prevention, control, and treatment (AKART) and not interfere with the operation of the POTW.

The more stringent of the local limits-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

All waste discharge permits issued by Ecology must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). Existing federal categorical limits for this facility are found under 40 CFR Part 469—Electrical and Electronic Components Point Source Category, Subpart A—Semiconductor Subcategory. Limits listed in Table 3 are necessary to satisfy the requirement for AKART.

Table 3 Technology-based effluent limits.

Pollutant of pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
	milligrams per liter (mg/L)	
Total toxic organics (TTO)	1.37	
Fluoride	32.0	17.4
pH	Within the range of 6.0-9.0 Standard Units	

TTO is defined for this industry (40 CFR 469.12) as the sum of the concentrations for each of the following toxic organic compounds which is found in the discharge at a concentration greater than ten (10) micrograms per liter (µg/L):

chloroform	1,1,2 trichloroethane	butyl benzyl phthalate
phenol	trichloroethylene	1,2 dichlorobenzene
carbon tetrachloride	2 chlorophenol	1,3 dichlorobenzene
dichlorobromomethane	2,4 dichlorophenol	1,4 dichlorobenzene
1,2 dichloroethane	2 nitrophenol	1,2 diphenylhydrazine
1,1 dichloroethylene	ethylbenzene	di-n-butyl phthalate
methylene chloride	pentachlorophenol	isophorone
tetrachloroethylene	2,4,6 trichlorophenol	naphthalene
toluene	anthracene	1,2,4 trichlorobenzene
1,1,1 trichloroethane	bis (2-ethylhexyl) phthalate	4 nitrophenol

Under 40 CFR 469.13 the facility may submit a certification of proper solvent management in lieu of monitoring if the facility has an approved solvent management plan. In order to secure this exemption from regular monthly monitoring for TTO, IMAT must make the request in writing and submit a solvent management plan. Ecology will require IMAT to complete quarterly sampling for TTO for one year before approval of an exemption from regular monitoring. Ecology must approve the solvent management plan in order for the monitoring exemption to go into effect. After approval of the solvent management plan, Ecology may allow IMAT to make the following certification as a signed attachment to the monthly discharge monitoring report (DMR):

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IMAT, Inc.

"Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for TTO, I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewater has occurred since filing the last discharge monitoring report. I further certify that this facility is implementing the solvent management plan submitted to Ecology."

EFFLUENT LIMITS BASED ON LOCAL LIMITS

To protect the **Clark Regional Wastewater District and Salmon Creek Wastewater Treatment Plant (POTW)** from pass-through, interference, concentrations of toxic chemicals that would impair beneficial or designated uses of sludge, or potentially hazardous exposure levels, limits for certain parameters are necessary. Ecology determined limits based on prohibited discharge standards and local limits established by the POTW and codified in ordinance. The POTW limits are listed in Table 4. The proposed limits for IMAT, based on the POTW prohibited discharge standards and local limits, are listed in Table 5.

Table 4 Clark Regional Wastewater District prohibited discharge standards and local limits

Parameter	Units	Daily Average (maximum daily)	Instantaneous Maximum
pH	Standard units (SU)	Within the range of 6.0 to 9.0 at all times.	
Total Suspended Solids (TSS)	Milligrams per liter (mg/L)	300	
5-day Biochemical Oxygen Demand (BOD ₅)	mg/L	240	
Chlorine Demand	mg/L	20	
All concentrations for metallic substances are for "total" metal unless indicated otherwise.			
Arsenic	mg/L	0.53	1.06
Cadmium	mg/L	0.28	0.56
Copper	mg/L	3.59	7.18
Chromium	mg/L	14.29	28.58
Cyanide	mg/L	5.09	10.18
Lead	mg/L	1.13	2.26
Molybdenum	mg/L	0.18	0.36
Mercury	mg/L	0.20	0.40
Nickel	mg/L	3.77	7.54
Selenium	mg/L	1.46	2.92

Table 4 Clark Regional Wastewater District prohibited discharge standards and local limits

Parameter	Units	Daily Average (maximum daily)	Instantaneous Maximum
Silver	mg/L	4.41	8.82
Zinc	mg/L	1.76	3.52
Fat, oil and grease (FOG); polar	mg/L	100	
FOG; non-polar	mg/L	50	

Ecology determined that IMAT has a reasonable potential to exceed the POTW prohibited discharge standards and local limits for pH.

Table 5 Proposed limits based on Clark Regional Wastewater District prohibited discharge standards and local limits; Outfall 001

Parameter	Units	Daily Average	Instantaneous Maximum
pH	SU	Within the range of 6.0 to 9.0 at all times.	

COMPARISON OF LIMITS WITH THE EXISTING PERMIT ISSUED OCTOBER 8, 2002

Table 6 Limits in the existing permit.

Parameter	Units	Average Monthly ¹	Maximum Daily ²
Flow ³	gallons per day (gpd)	3,000	6,000
pH ⁴	standard units	Within the range of 6.0 to 9.0	
Copper	mg/L		2.2
Fluoride	mg/L	17.4	32.0
Arsenic	mg/L		0.1
Barium	mg/L		5.5
Beryllium	mg/L		90

Table 6 Limits in the existing permit.

Parameter	Units	Average Monthly ¹	Maximum Daily ²
Cadmium	mg/L		0.3
Chlorine Demand	mg/L		20
Chromium	mg/L		1.7
Cyanide	mg/L		0.2
Iron	mg/L		10
Lead	mg/L		0.4
Mercury	mg/L		0.05
Nickel	mg/L		2.1
Selenium	mg/L		0.1
Silver	mg/L		0.1
Total toxic organics (TTO)	mg/L		1.37
Zinc	mg/L		2.3
Phenols or Cresols	mg/L		0.6
Oil and grease (total of petroleum and vegetable based)	mg/L		50
¹ The average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. If only one sample is taken during the calendar month, the maximum daily effluent limitation applies to that sample.			
² The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For other units of measurement, the daily discharge is the average measurement of the pollutant over the day.			

Table 6 Limits in the existing permit.

Parameter	Units	Average Monthly ¹	Maximum Daily ²
³ This flow limit corresponds to the monthly estimated flow in the wastewater monitoring table in S2.			
⁴ Indicates the range of permitted values. When pH is continuously monitored, excursions between 5.0 and 6.0, or 9.0 and 10.0 shall not be considered violations provided no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 30 minutes per month. Any excursions below 5.0 and above 10.0 are violations. The instantaneous maximum and minimum pH shall be reported monthly.			

TTO is defined for this industry (40 CFR 469.22) as the sum of the concentrations for each of the following toxic organic compounds which is found in the discharge at a concentration greater than ten (10) micrograms per liter (µg/L):

chloroform	ethylbenzene
phenol	pentachlorophenol
carbon tetrachloride	2,4,6 trichlorophenol
dichlorobromomethane	anthracene
1,2 dichloroethane	bis (2-ethylhexyl) phthalate
1,1 dichloroethylene	butyl benzyl phthalate
methylene chloride	1,2 dichlorobenzene
tetrachloroethylene	1,3 dichlorobenzene
toluene	1,4 dichlorobenzene
1,1,1 trichloroethane	1,2 diphenylhydrazine
1,1,2 trichloroethane	di-n-butyl phthalate
trichloroethylene	isophorone
2 chlorophenol	naphthalene
2,4 dichlorophenol	1,2,4 trichlorobenzene
2 nitrophenol	4 nitrophenol

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Under 40 CFR 469.13 and 40 CFR 469.23, a certification of proper solvent management may be submitted in lieu of monitoring if the facility has an approved solvent management plan. In order to secure this exemption from regular monthly monitoring for TTO, the Permittee must make the request in writing and submit a solvent management plan. The Permittee will be required to complete quarterly sampling for TTO for one year before the exemption from regular monitoring will be allowed. Ecology must approve the solvent management plan in writing in order for the monitoring exemption to go into effect. After approval of the solvent management plan, Ecology may allow the Permittee to make the following certification as a signed attachment to the monthly discharge monitoring report (DMR):

"Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for TTO, I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewater has occurred since filing the last discharge monitoring report. I further certify that this facility is implementing the solvent management plan submitted to Ecology."

Ecology has determined that IMAT has a reasonable potential to exceed the POTW prohibited discharge standards and local limits for pH only; therefore all other limit9s, which based on local limits, are not placed in the proposed permit.

Table 7 Proposed limits.

Parameter	Units	Average Monthly ³	Maximum Daily ⁴
Flow	gallons per day (gpd)	2,500 ⁵	5,000 ⁶
pH	standard units	Within the range of 6.0 to 9.0	
Fluoride	mg/L	17.4	32.0
TTO	mg/L		1.37

TTO is defined for this industry (40 CFR 469.12) as the sum of the concentrations for each of the following toxic organic compounds which is found in the discharge at a concentration greater than ten (10) micrograms per liter (µg/L):

³ The average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. If only one sample is taken during the calendar month, the maximum daily effluent limitation applies to that sample.

⁴ The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For other units of measurement, the daily discharge is the average measurement of the pollutant over the day.

⁵ As reported on the application.

⁶ As reported on the application.

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IMAT, Inc.

chloroform	1,1,2 trichloroethane	butyl benzyl phthalate
phenol	trichloroethylene	1,2 dichlorobenzene
carbon tetrachloride	2 chlorophenol	1,3 dichlorobenzene
dichlorobromomethane	2,4 dichlorophenol	1,4 dichlorobenzene
1,2 dichloroethane	2 nitrophenol	1,2 diphenylhydrazine
1,1 dichloroethylene	ethylbenzene	di-n-butyl phthalate
methylene chloride	pentachlorophenol	isophorone
tetrachloroethylene	2,4,6 trichlorophenol	naphthalene
toluene	anthracene	1,2,4 trichlorobenzene
1,1,1 trichloroethane	bis (2-ethylhexyl) phthalate	4 nitrophenol

Under 40 CFR 469.13 the facility may submit a certification of proper solvent management in lieu of monitoring if the facility has an approved solvent management plan. In order to secure this exemption from regular monthly monitoring for TTO, IMAT must make the request in writing and submit a solvent management plan. Ecology will require IMAT to complete quarterly sampling for TTO for one year before approval of an exemption from regular monitoring. Ecology must approve the solvent management plan in order for the monitoring exemption to go into effect. After approval of the solvent management plan, Ecology may allow IMAT to make the following certification as a signed attachment to the monthly discharge monitoring report (DMR):

"Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for TTO, I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewater has occurred since filing the last discharge monitoring report. I further certify that this facility is implementing the solvent management plan submitted to Ecology."

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, and that effluent limits are being achieved (WAC 173-216-110).

The monitoring schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110 and 40 CFR 403.12 (e),(g), and (h)).

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OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.5. as authorized under WAC 173-240-150 and WAC 173-216-110 . It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

PROHIBITED DISCHARGES

Certain pollutants are prohibited from being discharged to the POTW. These include substances which cause pass-through or interference, pollutants which may cause damage to the POTW or harm to the POTW workers (Chapter 173-216 WAC) and the discharge of designated dangerous wastes not authorized by this permit (Chapter 173-303 WAC).

DILUTION PROHIBITED

The Permittee is prohibited from diluting its effluent as a partial or complete substitute for adequate treatment to achieve compliance with permit limits.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to POTW permits issued by Ecology.

Condition G1. requires responsible officials or their designated representatives to sign submittals to Ecology.

Condition G2. requires the Permittee to allow Ecology to access the treatment system, production facility, and records related to the permit.

Condition G3. specifies conditions for modifying, suspending or terminating the permit.

Condition G4. requires the Permittee to apply to Ecology prior to increasing or varying the discharge from the levels stated in the permit application.

Condition G5. requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents.

Condition G6. prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations.

Conditions G7. relates to permit renewal and transfer.

Conditions G8. requires the Permittee to control production or wastewater discharge in order to maintain compliance with the permit.

Condition G9. prohibits the reintroduction of removed pollutants into the effluent stream for discharge.

Condition G10. requires the payment of permit fees.

Condition G11. describes the penalties for violating permit conditions.

PUBLIC NOTIFICATION OF NONCOMPLIANCE

A list of all industrial users which were in significant noncompliance with Pretreatment Standards or Requirements during any of the previous four quarters may be annually published by Ecology in a local newspaper. Accordingly, the Permittee is apprised that noncompliance with this permit may result in publication of the noncompliance.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limits and conditions believed necessary to control toxics. Ecology proposes that the permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Answer.com

(<http://www.answer.com>)

IMAT, Inc.

Application to Discharge Industrial Wastewater to a Publicly-Owned Treatment Works (POTW), January 11, 2007.

Washington State Department of Ecology (Ecology).

Laws and Regulations(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information (<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

APPENDICES

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

Ecology has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limits which are described in the rest of this fact sheet.

Public notice of application was published on June 16, 2008, and June 23, 2008, in the *Columbian* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

Ecology will publish a Public Notice of Draft on November 12, 2008, in the *Columbian* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Industrial Unit Permit Coordinator
Department of Ecology
Southwest Regional Office
PO Box 47775
Olympia, WA 98504-7775.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. Ecology will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

Ecology will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. Ecology's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from Ecology by telephone, 360-407-6280, or by writing to the address listed above.

This permit was written by Jacek Anuszewski, P.E.

APPENDIX B—GLOSSARY

AKART—The acronym for “all known, available, and reasonable methods of prevention, control and treatment.” AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and 520, WAC 173-200-030(2)(c)(ii), and WAC 173-216-110(1)(a).

Alternate Point of Compliance—An alternative location in the ground water from the point of compliance where compliance with the ground water standards is measured. It may be established in the ground water at locations some distance from the discharge source, up to, but not exceeding the property boundary and is determined on a site specific basis following an AKART analysis. An “early warning value” must be used when an alternate point is established. An alternate point of compliance must be determined and approved in accordance with WAC 173-200-060(2).

Ammonia—Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation—The average of the measured values obtained over a calendar month’s time.

AKART—This acronym is defined as: All known, available and reasonable methods of prevention, control, and treatment. AKART is a technology-based approach to limiting pollutants from wastewater discharges which requires an engineering judgment and an economic judgment.

Background water quality—The concentrations of chemical, physical, biological or radiological constituents or other characteristics in or of ground water at a particular point in time upgradient of an activity that has not been affected by that activity, [WAC 173-200-020(3)]. Background water quality for any parameter is statistically defined as the 95 percent upper tolerance interval with a 95 percent confidence based on at least eight hydraulically upgradient water quality samples. The eight samples are collected over a period of at least one year, with no more than one sample collected during any month in a single calendar year.

Best Management Practices (BMPs)—Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅—Determining the Biochemical Oxygen Demand (BOD₅) of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass—The intentional diversion of waste streams from any portion of the collection or treatment facility.

Categorical Pretreatment Standards—National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

Compliance Inspection - Without Sampling—A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling—A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST 6162

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Composite Sample—A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be “time-composite”(collected at constant time intervals) or “flow-proportional” (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction Activity—Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring—Uninterrupted, unless otherwise noted in the permit.

Early Warning Value—The concentration of a pollutant set in accordance with WAC 173-200-070 that is a percentage of an enforcement limit. It may be established in the effluent, ground water, surface water, the vadose zone or within the treatment process. This value acts as a trigger to detect and respond to increasing contaminant concentrations prior to the degradation of a beneficial use.

Enforcement limit—The concentration assigned to a contaminant in the ground water at the point of compliance for the purpose of regulation, [WAC 173-200-020(11)]. This limit assures that a ground water criterion will not be exceeded and that background water quality will be protected.

Engineering Report—A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Ground water—Water in a saturated zone or stratum beneath the surface of land or below a surface water body.

Grab Sample—A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User—A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater—Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Interference—A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Local Limits—Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

Maximum Daily Discharge Limitation—The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL) —The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

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Pass-through—A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH—The pH of a liquid measures its acidity or alkalinity. A pH of 7.0 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Point of Compliance—The location in the ground water where the enforcement limit shall not be exceeded and a facility must be in compliance with the Ground Water Quality Standards. It is determined on a site specific basis and approved or designated by Ecology. It should be located in the ground water as near and directly downgradient from the pollutant source as technically, hydrogeologically, and geographically feasible, unless an alternative point of compliance is approved.

Potential Significant Industrial User—A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 percent of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

Ecology may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL) —A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement [in accordance with 40 CFR 403.8(f)(6)].

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

Slug Discharge—Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the POTW. This may include any pollutant released at a flow rate which may cause interference with the POTW.

Soluble BOD₅—Determining the soluble fraction of Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of soluble organic material present in an effluent that is utilized by bacteria. Although the soluble BOD test is not specifically described in Standard Methods, filtering the raw sample through at least a 1.2 um filter prior to running the standard BOD₅ test is sufficient to remove the particulate organic fraction.

State Waters—Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater—That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit—A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria—A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids—That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)—Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit—A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C—TECHNICAL CALCULATIONS

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST 6162

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Dept. of Ecology

DMR Violation/Warning Summary Report

Printed: 09 SEP 2008

Section: %

From: 01-JUL-03 To: 09-SEP-08

Facility Name	Date	Permit ID	Montr	Viol?	Parameter	Type	Units	Value	Qualifier Code	Design Code	MinLimit	MaxLimit	Staff Name
IMAT	08/01/06	ST0006162C	AWN	Y	ARSENIC	MXD	MG/L		E	F		.1	JACEK ANUSZEWSKI
	08/01/06	ST0006162C	AWN	Y	BARIUM, TOTAL (AS BA)	MXD	MG/L		E	F		5.5	
	08/01/06	ST0006162C	AWN	Y	BERYLLIUM, TOTAL (AS BE)	MXD	MG/L		E	F		90	
	08/01/06	ST0006162C	AWN	Y	CADMIUM	MXD	MG/L		E	F		.3	
	08/01/06	ST0006162C	AWN	Y	CHLORINE DEMAND	MXD	MG/L		E	F		20	
	08/01/06	ST0006162C	AWN	Y	CHROMIUM	MXD	MG/L		E	F		1.7	
	08/01/06	ST0006162C	AWN	Y	CYANIDE	MXD	MG/L		E	F		.2	
	04/01/04	ST0006162C	AWN	Y	FLOW	AVM	GPD	2331		F		1800	
	05/01/04	ST0006162C	AWN	Y	FLOW	AVM	GPD	2126		F		1800	
	07/01/03	ST0006162C	AWN	Y	FLOW	MXD	GPD	3477		F		3000	
	09/01/03	ST0006162C	AWN	Y	FLOW	MXD	GPD	5950		F		3000	
	10/01/03	ST0006162C	AWN	Y	FLOW	MXD	GPD	4846		F		3000	
	02/01/08	ST0006162C	AWN	Y	FLOW	MXD	GPD	6506		F		6000	
	08/01/06	ST0006162C	AWN	Y	IRON	MXD	MG/L		E	F		10	
	08/01/06	ST0006162C	AWN	Y	LEAD	MXD	MG/L		E	F		.4	
	08/01/07	ST0006162C	AWN	Y	LEAD	MXD	MG/L		E	F		.4	
	08/01/06	ST0006162C	AWN	Y	MERCURY	MXD	MG/L		E	F		.05	
	08/01/07	ST0006162C	AWN	Y	MERCURY	MXD	MG/L		E	F		.05	
	08/01/06	ST0006162C	AWN	Y	NICKEL	MXD	MG/L		E	F		2.1	
	08/01/07	ST0006162C	AWN	Y	NICKEL	MXD	MG/L		E	F		2.1	
	08/01/06	ST0006162C	AWN	Y	OIL & GREASE	MXD	MG/L		E	F		50	
	08/01/07	ST0006162C	AWN	Y	OIL & GREASE	MXD	MG/L		E	F		50	
	08/01/06	ST0006162C	AWN	Y	ORGANICS, TOTAL TOXIC(TTO)	MXD	MG/L		E	F		1.37	
	08/01/07	ST0006162C	AWN	Y	ORGANICS, TOTAL TOXIC(TTO)	MXD	MG/L		E	F		1.37	
	08/01/06	ST0006162C	AWN	Y	PHENOLS	MXD	MG/L		E	F		.6	
	08/01/07	ST0006162C	AWN	Y	PHENOLS	MXD	MG/L		E	F		.6	
	08/01/04	ST0006162C	AWN	Y	SELENIUM, TOTAL (AS SE)	MXD	MG/L	.5	F	F		.1	
	08/01/06	ST0006162C	AWN	Y	SELENIUM, TOTAL (AS SE)	MXD	MG/L		E	F		.1	
	08/01/07	ST0006162C	AWN	Y	SELENIUM, TOTAL (AS SE)	MXD	MG/L		E	F		.1	
	08/01/06	ST0006162C	AWN	Y	SILVER	MXD	MG/L		E	F		.1	
	08/01/07	ST0006162C	AWN	Y	SILVER	MXD	MG/L		E	F		.1	

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST 6162

IMAT, Inc.

Dept. of Ecology

DMR Violation/Warning Summary Report

Printed: 09 SEP 2008

Section: %

From: 01-JUL-03 To: 09-SEP-08

Facility Name	Date	Permit ID	Montr	Viol?	Parameter	Type	Units	Value	Qualifier Code	Design Code	MinLimit	MaxLimit	Staff Name
IMAT	08/01/06	ST0006162C	AWN	Y	ZINC	MXD	MG/L		E	F		.6	
	08/01/07	ST0006162C	AWN	Y	ZINC	MXD	MG/L		E	F		.6	

QLF	QLF Description
A	GENERAL PERMIT EXCEPTION
B	BELOW DETECT LIMIT / NO DETECT
C	NO DISCHARGE
D	LOST SAMPLE
E	ANALYSIS NOT CONDUCTED
1	WRONG FLOW
2	OPERATIONS SHUTDOWN
3	LOW LEVEL PROCESSING
4	LAGOON PROCESSING
5	FROZEN CONDITIONS
6	MONITORING IS CONDITIONAL/NOT REQ THIS MP
7	DMR RECEIVED, PRODUCTION OR FLOW RELATED
8	OTHER
Q	EQUIPMENT FAILURE
S	DATA NOT SUMMARIZED
W	WAIVER
T	TOO NUMEROUS TO COUNT
F	LESS THAN
L	EMPTY (SAMPLE LOCATION)
X	ESTIMATED
9	TRACE
I	COLOR INDICATOR
R	IRRIGATION SEASON ONLY
P	PARAMETER NOT REQUIRED
G	INCORRECT SAMPLING FREQUENCY-VIOLATION
J	FLOODING
Z	EXPLANATION OF EXCEEDANCE PROVIDED
H	GREATER THAN
K	INCORRECT ANALYSIS
N	DMR NOT SUBMITTED
M	GREATER THAN AND A VIOLATION
V	LAB ERROR
10	INCORRECT FLOW MEASUREMENT CALIBRATION
11	THERE WAS NO QUALIFYING STORM EVENT
12	CONSISTENT ATTAINMENT OF BENCHMARK
13	INACTIVE/UNSTAFFED SITE
14	HARDSHIP FEE REDUCTION EXPECTATION
15	OPTIONAL (GROUNDWATER DISCHARGE)
16	NO RESULT SUBMITTED
GA	INCORRECT SAMPLING FREQUENCY-WARNING
17	BELOW QUANTITATION LEVEL
?	UNVERIFIED
B?	BELOW DETECT LIMIT/NO DETECT - UNVERIFIED
F?	LESS THAN - UNVERIFIED
G?	INCORRECT SAMPLING FREQUENCY-VIOLATION/UNVEF
I	
H?	GREATER THAN - UNVERIFIED
M?	GREATER THAN AND A VIOLATION - UNVERIFIED
N?	DMR NOT SUBMITTED - UNVERIFIED
P?	PARAMETER NOT REQUIRED - UNVERIFIED
X?	ESTIMATED - UNVERIFIED
11	THERE WAS NO QUALIFYING STORM EVENT - UNVERIF
12	CONSISTENT ATTAINMENT OF BENCHMARK - UNVERIFI
13	INACTIVE/UNSTAFFED SITE - UNVERIFIED
14	HARDSHIP FEE REDUCTION EXPECTATION - UNVERIFIED
15	OPTIONAL (GROUNDWATER DISCHARGE) - UNVERIFIE

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST 6162
IMAT, Inc.

Dept. of Ecology

DMR Violation/Warning Summary Report


Section: %

From: 01-JUL-03 To: 09-SEP-08

<u>Facility Name</u>	<u>Date</u>	<u>Permit ID</u>	<u>Montr</u>	<u>Viol?</u>	<u>Parameter</u>	<u>Type</u>	<u>Units</u>	<u>Value</u>	<u>Q</u>
<u>QLF</u>	<u>QLF Description</u>								

U2 MISREPRESENTED OR NO VALUES SUBMITTED ON DM	20 INSPECTION REPORT IS NOT INCLUDED
	U1 UNSIGNED OR NO SIGNATURE AUTHORITY
	U3 MULTIPLE SITES ON ONE DMR
	U4 DATE ISSUES
	U5 DISCHARGE POINT ISSUES
	U6 UNSAFE SAMPLING CONDITIONS
	U7 VALUES SUBMITTED IN RANGES OR AVERAGES
	U8 DATA SUBMITTED ON UNAPPROVED FORM
	U9 SAMPLE MISHANDLED
	1A FLOW NOT REPORTED
	18 INACTIVE CONSTRUCTION
	19 MINUS
	21 REPORT DISAPPROVED/INADEQUATE

dmr_warning_exl.rdf

% Limit 1: 

% Limit 2: 

% Limit 3: 

VIOL?: Y = YES, W = Warning -Approaching design limit

Limit Type: D = Design, I = Interim, F =

SECTION E. WASTEWATER INFORMATION

1. How are the water intake and effluent flows measured?

Intake: Meter installed at incoming city water line

Effluent: intergrator installed at outlet on AWN.

2. Provide measurements or range of measurements for treated wastewater prior to discharge to the POTW for the parameters with an "X" in the left column. Use the analytical methods given in the table unless an alternate method is approved by Ecology. All analyses (except pH) must be conducted by a laboratory registered or accredited by the Department of Ecology (WAC 173-216-125). If this is an application for permit renewal, provide data for the last year for parameters that are routinely measured. For parameters measured only for this application, place the values under "Maximum."

X	Parameter	Concentrations Measured			Analytical Method Std. Methods 19th edition	Detection Limit
		Minimum	Maximum	Average		
	BOD (5 day)		4.1		5210	2 mg/l
	COD		<10		5220 B, C, or D	5 mg/l
	Total Suspended Solids		1.00		2540D	1 mg/l
	Total Dissolved Solids		202		2540 C	
	Conductivity		232		2510 B	
	Ammonia-N		.0		4500-NH ₃ C	20 µg/l
	pH	6.0	9.0	7.2	4500-H	0.1 units
	Total Residual Chlorine		<0.1		4500-Cl E	1 mg/l
	Fecal Coliform		<1		9222 D	
	Total Coliform		<1		9221 B or 9222 B	
	Dissolved Oxygen		9.0		4500-O C or 4500-O G	
	Nitrate + Nitrite-N		<5.48		4500-NO ₃ E	0.5 mg/l
	Total Kjeldahl N		<1.0		4500-N _{org}	20 µg/l
	Ortho-phosphate-P		<0.200		4500-P E or 4500-P F	1 µg/l

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X	Parameter	Concentrations Measured			Analytical Method Std. Methods 19th edition	Detection Limit
		Minimum	Maximum	Average		
	Total-phosphate-P		0.11		4500-P B.4.	1 µg/l
	Total Oil & Grease		<5.05 mg/l		5520 C	0.2 mg/l
	Total Petroleum Hydrocarbon		<5.05 mg/l		5520 D, F	
	Calcium		<0.10		3500-Ca B	3 µg/l
	Chloride		8.13		4500-Cl C	0.15 µg/l
	Fluoride	2.0 mg/l	3.6 mg/l	2.6 mg/l	4500-F D	0.1 mg/l
	Magnesium		<0.1		3500-Mg B	0.5 µg/l
	Potassium		2		3500-K B	5 µg/l
	Sodium		67		3500-Na B	2 µg/l
	Sulfate		10.3		4500-SO ₄ E	1 mg/l
	Arsenic (total)		<0.001 mg/l		3114 B	2 µg/l
	Barium (total)		<0.001 mg/l		3500-Ba B	30 µg/l
	Cadmium (total)		<0.001 mg/l		3500-Cd B	5 µg/l
	Chromium (total)		<0.001 mg/l		3500-Cr B	50 µg/l
	Copper (total)		0.00443 mg/l		3500-Cu B	20 µg/l
	Lead (total)		<0.001 mg/l		3500-Pb B	100 µg/l
	Mercury		<0.0002 mg/l		3500-Hg B	0.2 µg/l
	Molybdenum (total)		<0.0010		3500-Mo	1 µg/l
	Nickel (total)		<0.002 mg/l		3500-Ni	20 µg/l
	Selenium (total)		<0.002 mg/l		3500-Se C	2 µg/l
	Silver (total)		<0.001 mg/l		3500-Ag B	10 µg/l
	Zinc (total)		0.0239 mg/l		3500-Zn B	5 µg/l

APPENDIX D—RESPONSE TO COMMENTS

No comments were received by Ecology.